

What is claimed is:

1. A metal complex which has a functional group capable of forming a covalent bond with an amino group of an N-terminal amino acid residue of protein or peptide or with a carboxyl group of a C-terminal amino acid residue of protein or peptide.

2. The metal complex according to claim 1, which has a ligand with the functional group capable of forming the covalent bond with the amino group of the N-terminal amino acid residue of protein or peptide or with the carboxyl group of the C-terminal amino acid residue of protein or peptide.

3. The metal complex according to claim 1, wherein a metal element thereof is selected from transition metals and typical metals.

4. The metal complex according to claim 1, wherein a coordination number thereof is 2, 3, 4, 5 or 6.

5. The metal complex according to claim 1, wherein a ligand thereof is a monodentate ligand or a polydentate ligand.

6. The metal complex according to claim 1, wherein the covalent bond formed between the amino group of the N-terminal amino acid residue of protein or peptide or the carboxyl group of the C-terminal amino acid residue of protein or peptide and the functional group is not cleaved in a stage of ionization in mass spectrometry.

7. The metal complex according to claim 1, wherein the functional group capable of forming the covalent bond with the

amino group of the N-terminal amino acid residue of protein or peptide is a functional group capable of forming the covalent bond through nucleophilic reaction with the amino group.

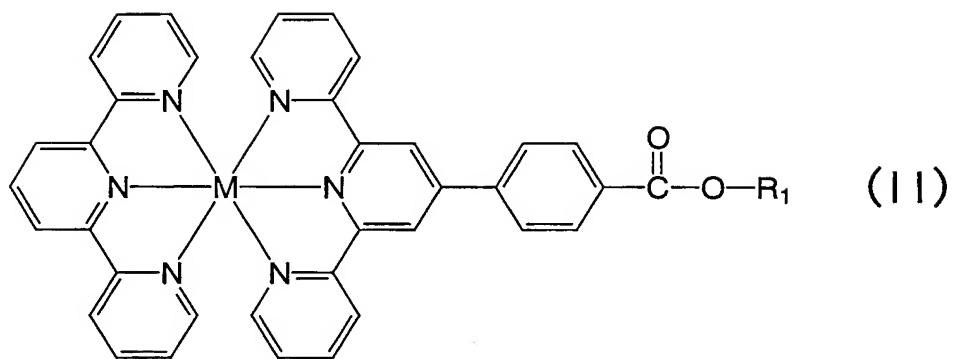
8. The metal complex according to claim 1, wherein the functional group capable of forming the covalent bond with the amino group of the N-terminal amino acid residue of protein or peptide is -CO-OR₁, where R₁ represents H or an active ester-forming group.

9. The metal complex according to claim 1, which is represented by the following general formula (I):

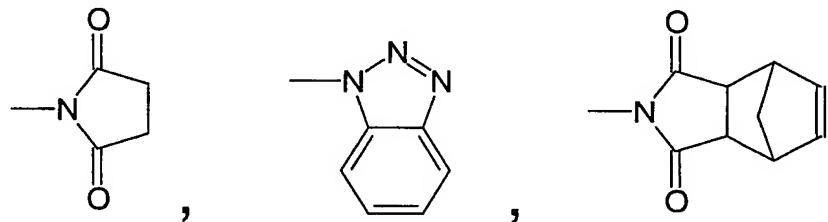


wherein M represents a transition metal; L₁ represents a ligand having a substituent: -CO-OR₁ (where R₁ represents H or an active ester-forming group) or -R₂-CO-OR₁ (where R₂ represents an arylene group or an alkylene group, R₁ represents H or an active ester-forming group); L₂ represents a ligand; m is a number of L₂, indicating 0, 1, 2, 3, 4 or 5.

10. The metal complex according to claim 1, which is represented by the following general formula (II):



wherein M represents a transition metal; and R₁ represents H or an active ester-forming group represented by any of the following formula:



11. The metal complex according to claim 1, wherein the functional group capable of forming the covalent bond with the carboxyl group of the C-terminal amino acid residue of protein or peptide is a functional group capable of forming the covalent bond through nucleophilic reaction with the carboxyl group.

12. The metal complex according to 1, wherein the functional group capable of forming the covalent bond with the carboxyl group of the C-terminal amino acid residue of protein

or peptide is -NH₂ or -NHNH₂.

13. The metal complex as claimed in claim 1, which is represented by the following general formula (III):



wherein M represents a transition metal; L₃ represents a ligand having a substituent: -NH₂, -NHNH₂, -R₂-NH₂ or -R₂-NHNH₂ (where R₂ represents an arylene group or an alkylene group); L₂ represents a ligand; m is a number of L₂, indicating 0, 1, 2, 3, 4 or 5.

14. A reagent for determining amino acid sequence of protein or peptide, which comprises the metal complex according to claim 1.

15. A method for determining amino acid sequence of protein or peptide, which comprises using the metal complex according to claim 1.

16. A method for determining amino acid sequence of protein or peptide, which comprises
reacting the metal complex according to claim 1 with a protein or peptide (A) of which the amino acid sequence is to be determined, to form a metal complex derivative (B) where the covalent bond of the functional group of the metal complex with the amino group of the N-terminal amino acid residue of the protein or peptide (A) or with the carboxyl group of the C-terminal amino acid residue of protein or peptide is formed, and
analyzing the metal complex derivative (B) through mass spectrometry.